

### REMARKS

The only issue outstanding in the Office Action mailed May 30, 2006, is the rejection of all pending claims under 35 U.S.C. 103. Reconsideration of this rejection, in view of the following discussion, is respectfully requested.

Claims 1-15 have been rejected under 35 U.S.C. 103 over commonly assigned Stern '946 taken with John (GB '070) and Andersen '305. Reconsideration of this rejection is respectfully requested.

Stern discloses the production of a catalyst which can be obtained by any of impregnation, mixing or co-precipitation, as detailed at the bottom of column 5. The second technique in this portion of the patent, mixing, is described by patentees as:

"Mixing of at least one zinc compound and hydrated alumina in the presence of a peptizing agent (nitric acid, acetic acid). The zinc compounds are then selected from the group that is formed by zinc oxide, zinc hydroxide, zinc carbonate, and zinc hydroxycarbonate. The mixed product is then shaped by extrusion, and then dried and calcined."

Thus, the patent does not teach or suggest a process in which, first, zinc oxide *and* zinc nitrate or carbonate are, as a mixture, mixed with alumina gel that has been peptized in the presence of water and nitric acid, so as to form a paste. Instead, Stern '946 discloses a process in which a zinc compound and hydrated alumina are combined in the presence of a peptizing agent (e.g., nitric acid or acidic acid) and subsequently extruded. This thus fails to teach the combination of a *mixture* of zinc oxide and zinc salt with a previously peptized alumina gel. Attention is directed to newly added claim 16, which highlights this non-obvious feature of the present invention; specifically, the mixing of an alumina gel with a mixture of zinc oxide *and* zinc carbonate or nitrate, with further optional processing.

All examples of Stern show the use of only a single zinc compound, either the oxide or nitrate. (Zinc nitrate is disclosed solely in Example 6.) Thus, it is clear that the patent does not teach the use of mixtures, as presently claimed.

John is cited in order to remedy at least one deficiency of the primary reference with respect to mixing times for stage (a) of claim 1 wherein zinc oxide/nitrate or carbonate mixture is

combined with water and nitric acid. Thus, John fails to remedy the above deficiency in the primary reference, inasmuch as the catalyst preparation process of John is the *first* process disclosed at column 5 of Stern, that of impregnation, rather than the mixing process disclosed in the second embodiment of column 5 of the '946 patent. For example, note that John teaches a catalyst "obtainable by the impregnation of an alumina carrier material employing an aqueous zinc salt solution." See page 1, lines 26-28. See also Example 1, wherein a shaped alumina carrier is impregnated with aqueous zinc nitrate. Inasmuch as John is directed to impregnation, one of ordinary skill in the art would not find it to be relevant to the mixing embodiment of the primary reference, as in Stern there is no solid carrier being impregnated. Of course, the reaction conditions for impregnation would be expected by one of ordinary skill in the art to vary from those of the production of a gel with a peptizing agent, as disclosed in Stern. Thus, one of ordinary skill in the art would not find these references to be combinable.

Moreover, John fails to remedy the above discussed deficiency of the primary reference, inasmuch as it also fails to disclose the use of a mixture of zinc oxide and a zinc salt such as a nitrate or carbonate.

Andersen is cited slowly for extrusion processes, and it is not seen that the reference remedies any of the above discussed deficiencies.

The present specification teaches, for example, at page 2, that the presently claimed process surprisingly enables an advantageous modification of physical/mechanical properties of a catalyst. See the paragraph bridging pages 2 and 3 of the specification. In particular, the resistance to crushing of the present catalyst, determined as detailed at page 5 of the specification, are shown to be improved versus a catalyst which is produced by mixture of zinc oxide with alumina gel. See comparative Example 1, and note Table 1 at page 10 of the specification showing, for catalysts in accordance with the invention, nearly double resistance to crushing in the poorest performing catalyst in accordance with the invention. This evidence provides further basis for patentability of the present claims which recite the use of such mixtures.

It is moreover noted that such unexpected results clearly establish that catalysts produced in accordance with the present invention differ physically from those known in the prior art, thus providing basis for patentability of catalyst claims 14, 15, 19 and 20.

Accordingly, withdrawal of the rejection under 35 U.S.C. 103 is respectfully requested. Should the Examiner have any questions or comments, he is cordially invited to telephone the undersigned at the number below.

The Commissioner is hereby authorized to charge any fees associated with this response or credit any overpayment to Deposit Account No. 13-3402.

Respectfully submitted,



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